

Before the
FEDERAL COMMUNICATIONS COMMISSION
Washington, D.C. 20554

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SEP 24 2001

FEDERAL COMMUNICATIONS COMMISSION
OFFICE OF THE SECRETARY

In the Matter of)
Petition of WorldCom, Inc. Pursuant)
to Section 252(e)(5) of the)
Communications Act for Expedited)
Preemption of the Jurisdiction of the)
Virginia State Corporation Commission)
Regarding Interconnection Disputes)
with Verizon Virginia Inc., and for)
Expedited Arbitration)

CC Docket No. 00-218

In the Matter of)
Petition of Cox Virginia Telecom, Inc., etc.)

CC Docket No. 00-249

In the Matter of)
Petition of AT&T Communications of)
Virginia Inc., etc.)

CC Docket No. 00-251

VERIZON VIRGINIA INC.

VOLUME III OF III

**NON-RECURRING COST PANEL
SURREBUTTAL TESTIMONY**

**(Public Version)
SEPTEMBER 21, 2001**

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Verizon VA Non-Recurring Cost Panel Surrebuttal Testimony

1 **I. INTRODUCTION (JDPL Issues II-1 to II-1-d; II-2 to II-2-d; IV-36)**

2
3 **Q. Who are the members of the witness Panel sponsoring this testimony?**

4 A. The members of this Panel are Ralph Curbelo, Lou Minion, Mike Peduto, John White,
5 and Gene Goldrick.
6

7 **Q. Mr. Curbelo, are you the same Ralph Curbelo who filed direct testimony concerning**
8 **non-recurring costs and costs associated with line sharing and xDSL-compatible**
9 **loops on July 31, 2001 and rebuttal testimony on August 27, 2001?**

10 A. Yes.
11

12 **Q. Mr. Minion, are you the same Lou Minion who filed direct testimony concerning the**
13 **application of cost factors on July 31, 2001?**

14 A. Yes.
15

16 **Q. Mr. Peduto, are you the same Mike Peduto who filed direct testimony concerning**
17 **non-recurring work activities on July 31, 2001 and rebuttal testimony on August 27,**
18 **2001?**

19 A. Yes. However, I am no longer an employee of Verizon Communications, Inc. I am now
20 the Managing Principal of Stevton Consulting, LLC. I will continue, however, to testify
21 on Verizon VA's behalf in this proceeding.
22

Verizon VA Non-Recurring Cost Panel Surrebuttal Testimony

1 **Q. Mr. White, are you the same John White who filed direct testimony concerning line**
2 **sharing and xDSL-compatible loops on July 31, 2001?**

3 A. Yes.

5 **Q. Mr. Goldrick, please describe those aspects of your professional background most**
6 **pertinent to your testimony.**

7 A. I am employed by Verizon Services Group as a Statistician within the Verizon Service
8 Costs organization. As such, I am responsible for the statistical aspects of the cost
9 studies for various products and services offered by the Verizon operating companies.
10 I received a Bachelor's Degree in Economics from the State University of New York at
11 Stony Brook in 1978, and a Master's Degree in Economics from the State University of
12 New York at Stony Brook in 1981. I completed all coursework for a Ph.D. in Economics
13 from New York University in 1989.

15 I have been employed by Verizon and its predecessor corporations since 1984.
16 During these years I have worked on a diverse set of statistical modeling, sampling, and
17 econometric projects for various organizations. I have designed and carried out a
18 stratified random sample study to estimate the amount of unauthorized long-distance
19 calling on blocked accounts. I have specified and estimated multinomial logistic models
20 to predict the impact of telephone bill size on account delinquency. I have developed
21 statistical classification models to predict customer response to telemarketing efforts. For
22 benchmarking NYNEX against best practice and average practice telephone companies, I
23 have specified and estimated pooled cross-section/time-series models of telephone

Verizon VA Non-Recurring Cost Panel Surrebuttal Testimony

1 companies' expenses and presented the results to the staff of the New York State Public
2 Service Commission. I have developed time series models to forecast residence access
3 lines in New York State in support of the Company's budgeting and planning processes.
4 I have presented expert statistical testimony before the New York State Public Service
5 Commission on the appropriate use of robust regression models to estimate "976" call
6 volumes in the event of billing system malfunction.

7
8 Prior to joining NYNEX, I was employed by National Economic Research
9 Associates as a research analyst.
10

11 **Q. What is the purpose of this testimony?**

12 A. This testimony is submitted by Verizon Virginia, Inc. ("Verizon VA") to rebut the
13 testimony filed by AT&T and WorldCom ("AT&T/WorldCom") on August 27, 2001,
14 regarding Verizon VA's NRCM and DSL-related costs.
15

16 **Q. What role did each member of this Panel play in the preparation of this testimony?**

17 A. Although all members of this Panel have reviewed and support this testimony in its
18 entirety, each Panel member assumed primary responsibility for specific segments of the
19 testimony. Specifically:
20

- 21 • Mr. Curbelo discusses non-recurring costs generally, as well as non-recurring
22 costs associated with line sharing and xDSL-compatible loops.
- 23 • Mr. Minion discusses the applicability of the EF&I factor to splitter costs.

Verizon VA Non-Recurring Cost Panel Surrebuttal Testimony

- 1 • Mr. Peduto discusses non-recurring costs and work activities from an operations
2 perspective.
- 3 • Mr. Goldrick discusses the soundness of Verizon's survey methodology for work
4 times.
- 5 • Mr. White discusses non-recurring costs with respect to the provision of xDSL-
6 compatible loops.

7
8 **Q. Please summarize the central points made in your surrebuttal testimony.**

9 A. AT&T/WorldCom's criticisms of the Verizon VA non-recurring cost model ("NRCM")
10 are unavailing. In particular, our conclusions are as follows:

11
12 **Forward-Looking Model:** The Verizon VA NRCM is forward-looking.
13 Verizon VA has examined the costs that it expects to incur in provisioning UNEs on a
14 going-forward basis using currently available technology. Tellingly, Verizon VA's
15 assumes that about 89% of all connect tasks, and 69% of all disconnect tasks, will be
16 *completely* automated on a going-forward basis. AT&T/WorldCom, on the other hand,
17 have presented a model that relies extensively on technology that is not currently
18 available and will not be available for the foreseeable future (*e.g.*, the supposed ability to
19 provision loops electronically without any physical cross-connects) and on procedures
20 that are not feasible in a multi-carrier environment. Their model, moreover, fails to
21 account for the significant degree of manual activity that will be necessitated by the
22 ordering and provisioning of UNEs, even on a forward-looking basis.

Verizon VA Non-Recurring Cost Panel Surrebuttal Testimony

1 **Survey Methodology:** AT&T/WorldCom's attacks notwithstanding, the
2 methodology that Verizon VA employed to derive work times is sound. Verizon VA's
3 model is based on empirical data collected from those individuals who actually perform
4 the tasks at issue. After collecting work time estimates, Verizon VA ensured that the
5 estimates reflected expected advances by applying a Forward-Looking Adjustment
6 Factor.^{1/} AT&T's claims regarding work times, in contrast, are based on the entirely
7 unsupported conjectures of a handful of purported experts.

8
9 AT&T/WorldCom's laundry list of criticisms of Verizon VA's survey
10 methodology is unavailing. Their proposal that Verizon VA should have had workers
11 simply provide a "forward-looking" time estimate in the first instance is mystifying,
12 given that workers often have no basis upon which to make guesses regarding future
13 mechanization. Moreover, AT&T/WorldCom's suggestion that Verizon VA should have
14 taken a more aggressive role in removing perceived "outliers" in the time estimates
15 received from surveyed workers contradicts sound statistical practice and, in any event,
16 ignores the fact that NERA calculated 95% precision levels for the average work times.
17 Using long-standing statistical procedures, NERA determined that the observed
18 variations in work time estimates result in sufficiently precise estimates of the average
19 work times and thus of the UNE rates. Contrary to AT&T/WorldCom's claims,
20 variations in the time estimates submitted by survey respondents are not cause for
21 suspicion; rather, such variations reflect the fact that work activities will take more or less

^{1/} The Forward-Looking Adjustment Factor adjusts work times to account for expected future mechanization of processes that are now performed manually and for expected future productivity gains affecting those activities for which manual processing will remain necessary. *See, e.g.,* VZ-VA Panel Direct at 303.

Verizon VA Non-Recurring Cost Panel Surrebuttal Testimony

1 time, depending on the particular circumstances involved in the performance of the work
2 activity. In addition, Verizon VA's use of mean, rather than median, work times is
3 entirely appropriate, because only the use of the mean times will ensure that Verizon VA
4 neither under-recovers nor over-recovers its costs.

5
6 **Ordering Processes:** Verizon VA's NRCM accurately reflects efficient,
7 forward-looking ordering processes. AT&T/WorldCom erroneously and with no support
8 assume the Verizon VA will engage in absolutely *no* manual handling during the
9 ordering stage. Verizon VA's model, on the other hand, appropriately recognizes that
10 mechanized processing of CLEC orders will not always be more efficient than manual
11 processing. With respect to certain complex or "low-volume" orders, it would be more
12 expensive for Verizon VA — and therefore for CLECs and end users — to create OSS to
13 handle the orders automatically than to process the orders manually. In these cases,
14 mechanization cannot, and should not, be assumed — even on a forward-looking basis.
15 Moreover, even orders that are designed to "flow through" the system will sometimes
16 "fall out" — a point that AT&T/WorldCom appear to recognize, yet then inexplicably
17 ignore in their model. Verizon VA has provided concrete empirical evidence concerning
18 fallout, and its data should be accepted.

19
20 **Provisioning Processes:** The Commission should adopt Verizon VA's proposed
21 provisioning-related non-recurring costs. Special or complex CLEC requests often
22 require manual handling in the provisioning phase, as in the ordering phase.
23 AT&T/WorldCom's dismissal of the need for activities performed by Verizon VA

Verizon VA Non-Recurring Cost Panel Surrebuttal Testimony

1 organizations such as the MLAC, RCMAC, and RCCC is unavailing: these organizations
2 perform critical tasks that are crucial to the provision of UNEs. Indeed, in several cases,
3 these organizations are only as robust as they are (and their associated manual processing
4 requirements are only as extensive as they are) *because the CLECs themselves have*
5 *demanding that their roles be expanded.* That is, AT&T and WorldCom have petitioned
6 regulators elsewhere to require Verizon to perform costly manual processes on the one
7 hand, and have then petitioned this Commission and other regulatory bodies to require
8 Verizon to assume away these very same processes as unnecessary.

9
10 Further, while AT&T/WorldCom criticize the levels of manual processing that are
11 assumed for various work groups involved in the provisioning process, they provide no
12 evidence that the actual levels are, in fact, any lower. Similarly, AT&T/WorldCom
13 criticize the assumption that some tasks will continue to be performed in 100% of cases,
14 even on a forward-looking basis, seemingly without understanding that certain tasks
15 simply cannot be assumed away. Provisioning of UNEs can be quite complicated, and
16 activities such as order screening and coordination will remain an integral part of Verizon
17 VA's operations for the foreseeable future.

18
19 Moreover, just as orders that are designed to "flow through" the Verizon VA
20 mechanized ordering systems sometimes "fall out," so too some orders that are not
21 expected to require manual processing during the provisioning process will, in fact,
22 require such intervention (by the MLAC or the RCMAC). Thus, manual processing —
23 by design or otherwise — is expected to continue to be necessary to the provisioning

Verizon VA Non-Recurring Cost Panel Surrebuttal Testimony

1 process. Furthermore, while fallout is an area of some contention, it represents a fraction
2 of the work effort studied. Most of the work captured in the Verizon VA non-recurring
3 cost studies is associated with required manual effort: work that is not mechanized, will
4 not be mechanized in the foreseeable future, and is unaffected by the degree of
5 flowthrough.

6
7 **Loop Provisioning Processes:** Verizon VA's charges for loop provisioning are
8 appropriate. In addition to their unrealistic and unsupported assumptions concerning
9 electronic loop provisioning discussed in Section II, AT&T/WorldCom seek to drive
10 down the cost of loop provisioning by assuming unrealistically low times for completing
11 essential tasks and disputing the need to perform other tasks. Their arguments are
12 baseless. Verizon VA's estimates — which, unlike the CLECs, are based on survey
13 responses from workers who actually perform the tasks at issue — accurately reflect the
14 time it takes to provision loops. Moreover, the procedures about which AT&T and
15 WorldCom complain here — primarily in the context of Hotcuts — are in place precisely
16 because *the CLECS demanded them*; in any event, those procedures comport with
17 industry standards and are necessary to ensuring that end user service is not interrupted
18 during a migration. To our knowledge, no carrier has employed the fanciful alternative
19 urged by AT&T and WorldCom. Verizon VA's analysis suggests that if that procedure
20 had been in place in July, 2001, 11% of all customers migrating to AT&T would have
21 been left without service for some period of time.

Verizon VA Non-Recurring Cost Panel Surrebuttal Testimony

1 **UNE-P Rates:** Verizon VA's non-recurring costs for the provision of UNE-P
2 service are appropriate. These rates do, in some cases, reflect more complex provisioning
3 and installation activities than Verizon would use for retail services, but only because the
4 provision of UNE-P service through a CLEC to an end user is more complex than retail
5 provisioning. Moreover, Verizon VA does not use 100% "dedicated" plant, as proposed
6 by AT&T/WorldCom, because use of such plant — which would prevent Verizon VA
7 from utilizing its facilities in the flexible way mandated by a fluid, competitive market —
8 would be extremely inefficient.

9
10 **Rate Structure:** AT&T/WorldCom's criticisms of Verizon VA's approach to
11 distinguishing "recurring" from "non-recurring" costs are unwarranted. As explained in
12 more detail in testimony by Dr. Shelanski,^{2/} non-recurring charges are appropriate to
13 recover one-time costs that are incurred as a direct result of receiving and filling a CLEC
14 request for service — even though, in some cases, the facilities involved might be reused.
15 This approach is not only sound ratesetting practice; it also has been validated by this
16 Commission.^{3/}

17
18 **xDSL:** Verizon VA's costs with respect to line sharing, loop conditioning, and
19 loop qualification are appropriate and supported by the record. AT&T/WorldCom seek
20 to avoid paying for the wideband testing system, line sharing OSS, and cooperative

^{2/} See Shelanski Rebuttal at 15-25.

^{3/} See, e.g., First Report and Order, *In the Matter of Implementation of the Local Competition Provisions in the Telecommunications Act of 1996*, 11 FCC Rcd 15499, 15874 ¶ 751 (1996) ("Local Competition Order").

Verizon VA Non-Recurring Cost Panel Surrebuttal Testimony

1 testing, despite the fact that Verizon VA has or will incur these costs solely on behalf of
2 CLECs. AT&T/WorldCom's challenges to Verizon VA's splitter costs also should fail.
3 Their assumption of splitter placement on Verizon VA's MDF is unrealistic, ignores the
4 practical consequences of such a configuration, and is inconsistent with FCC
5 requirements. They provide no evidence to challenge Verizon VA's splitter installation
6 costs, which were appropriately determined using a well-accepted factor methodology
7 and validated by independent vendor invoices.

8
9 The Commission has already ruled that carriers may recover loop conditioning
10 costs when a CLEC requests removal of load coils and bridge taps so that the CLEC may
11 provide xDSL services to end users. Verizon VA's recovery of its costs of performing
12 this work is both required under the Act and entirely consistent with forward-looking
13 costing principles. Further, Verizon VA's estimates of the work steps and time required
14 for loop conditioning are reasonable and supported by the record. AT&T/WorldCom, in
15 stark contrast, ignore many necessary steps and allow far too little time, and
16 inappropriately assume that Verizon VA will condition multiple loops at a time.

17
18 The Commission also should adopt Verizon VA's loop qualification charges.
19 Verizon VA has created a loop qualification database for the benefit of all xDSL end
20 users — including the end users served by CLECs. Verizon therefore properly spreads
21 these costs among all xDSL lines — wholesale and retail. AT&T/WorldCom's
22 contentions that Verizon VA should be assumed to have all relevant loop qualification
23 data in its databases ignore both reality and this Commission's rulings. Moreover,

Verizon VA Non-Recurring Cost Panel Surrebuttal Testimony

1 AT&T/WorldCom wrongly assumes that Verizon VA incurs virtually no costs to provide
2 this data. Verizon VA's costs for manual loop qualification and engineering query also
3 are appropriate. When a CLEC requests that Verizon VA manually review its records to
4 provide additional loop information, the CLEC should bear the costs.

5 AT&T/WorldCom's contention that this information should already be in Verizon VA's
6 databases, and thus that the requesting CLEC should not have to pay, not only is factually
7 incorrect but also violates cost causation and forward-looking cost principles.

8
9 Finally, Verizon VA's proposed costs for adding ISDN electronics are
10 appropriate. This equipment is dedicated to the CLEC, and recovery on a non-recurring
11 basis is particularly appropriate because low customer demand for ISDN leaves Verizon
12 VA unlikely to be able to recover its costs through recurring charges. Moreover, CLECs
13 can avoid this optional cost by purchasing and installing repeaters themselves.

14
15 **II. VERIZON VA's NRCM IS FORWARD-LOOKING. (JDPL Issues II-1 to II-1-d; II-**
16 **2 to II-2-d; IV-36)**

17
18 **Q. Do you agree with AT&T/WorldCom that Verizon VA's NRCM is "inconsistent**
19 **with . . . forward-looking economic cost principles"? [AT&T/WorldCom NRC**
20 **Rebuttal Panel at 6.]**

21 **A.** No. As explained in the Direct and Rebuttal Testimony of Dr. Shelanski, as well as the
22 Direct Testimony of Dr. Gordon, Verizon VA's NRCM is appropriately forward-looking
23 and models the non-recurring costs that Verizon VA expects to incur going forward.^{4/}

^{4/} See Shelanski Direct at 32-35; Shelanski Rebuttal at 2, 21-25; Gordon Direct at 29-31.

Verizon VA Non-Recurring Cost Panel Surrebuttal Testimony

1 The large majority of non-recurring costs are by their nature labor-related. As described
2 in detail in its direct testimony and further below, Verizon VA accordingly determined
3 the required non-recurring tasks and the times currently needed to accomplish those tasks
4 to serve as a baseline for its estimates. Verizon VA then applied forward-looking
5 adjustment factors to reflect all anticipated efficiencies that Verizon VA expects to
6 implement by the end of the planning period as a result of mechanization and improved
7 processes that would reduce work times and/or decrease the frequency with which
8 particular tasks would have to be performed.

9
10 Consistent with the TELRIC standard, these efficiencies are based on *currently*
11 *available* technologies, not hypotheses of what technologies might be available in the
12 future. By contrast, AT&T/WorldCom's model and supporting testimony is replete with
13 theorizing about allegedly alternative ways of performing tasks for which they are unable
14 to provide any real-world examples demonstrating that their hypotheses are practicable or
15 feasible. Thus, while AT&T/WorldCom purport to describe a way to provision loops
16 electronically using integrated digital loop carrier ("IDLC"), in discovery they
17 acknowledge that they know of no one who actually provisions loops in such a manner.^{5/}
18 They assume that elements can be provisioned with only a 2% overall fallout rate, yet
19 again can point to no existing system that comes close to that performance.^{6/} Likewise,
20 their model assumes 100% Dedicated Inside Plant and 100% Dedicated Outside Plant,
21 but, in discovery, they concede that these assumptions are "modeling conventions" that

^{5/} See Responses to VZ-VA IV-21 & IV-22 (attached to Verizon VA NRC Panel Rebuttal Testimony at Attachment B).

^{6/} Verizon VA Panel Rebuttal Testimony at 16-17.

Verizon VA Non-Recurring Cost Panel Surrebuttal Testimony

1 have no relation to how a real carrier operates.^{7/} “Forward-looking” does not mean
2 fantasy, yet fantasizing is the activity in which AT&T/WorldCom have largely indulged.

3
4 **Q. What is your assessment of the exhibits that AT&T/WorldCom have submitted**
5 **(AT&T/WCOM NRCM-2 and AT&T/WCOM NRCM-3) to purportedly**
6 **demonstrate that the network modeled by Verizon VA is “outmoded and**
7 **inefficient”?**

8 A. Exhibits AT&T/WCOM NRCM-2 and AT&T/WCOM NRCM-3 incorporate unrealistic
9 and improper assumptions concerning loop technologies. These flawed assumptions
10 have infected the CLECs’ estimates of the costs Verizon VA faces in providing UNEs,
11 even in a forward-looking environment.

12
13 First, these slides assume the existence of a voice-grade UNE loop that is simply a
14 DS0 (voice grade) channel. But, as described in detail in Verizon VA’s rebuttal
15 testimony, this “element” — also sometimes described as a “virtual loop” — bears no
16 resemblance to the 2-wire analog loop with which AT&T/WorldCom try to equate it.^{8/}
17 AT&T/WorldCom attempt to pass off this non-existent UNE product as a viable means
18 of provisioning a simple voice-grade loop, and then base their entire model on that
19 fiction. Their motive is simply to reduce the rates associated with provisioning today’s 2-
20 wire analog loops. The fact is that an unbundled single DS0 channel that
21 AT&T/WorldCom reference is not a currently offered product *at all*, as evidenced by the

^{7/} See Responses to VZ-VA IV-28 & IV-31 (attached to Verizon VA NRC Panel Rebuttal Testimony at Attachment B).

^{8/} See VZ-VA NRC Panel Rebuttal at 48-53.

Verizon VA Non-Recurring Cost Panel Surrebuttal Testimony

1 CLECs' inability to cite a single example of a carrier that offers unbundled loops as they
2 propose.^{9/} If Verizon VA were to offer such a DS0 channel, that channel would be a
3 completely separate UNE product and its pricing would be entirely divorced from the
4 pricing of a 2-wire analog loop serviced by copper or universal digital loop carrier
5 ("UDLC"). Even AT&T/WorldCom concede that the virtual DS0 loop and a 2-wire
6 copper- or UDLC-fed loop would require "two distinct methods of interconnection."^{10/}
7 AT&T/WorldCom should not be allowed to treat these distinct products — one real, the
8 other fantasy — as though they were the same and thereby lower the non-recurring
9 charge that Verizon VA will in fact incur to provide an ordinary stand-alone loop
10 provisioned over copper or UDLC.

11
12 Second, in connection with this DS0 channel, AT&T/WorldCom's exhibits
13 assume the existence of a channelized DS1/DS3 UNE product that connects the Verizon
14 VA remote terminal (RT) to the CLEC collocation arrangement. However, no such
15 product exists in Verizon VA's product suite. Moreover, given the serious operations,
16 administration, and security issues involving GR-303 architecture in a multi-LEC
17 environment, described in more detail below, such a product is not currently available
18 and no industry standards even exist for such an approach.^{11/} Therefore, the cost savings
19 that AT&T/WorldCom propose through use of a channelized DS1/DS3 to carry

^{9/} See Responses to VZ-VA IV-21 & IV-22 (attached to Verizon VA Panel Rebuttal Testimony at Attachment B).

^{10/} AT&T/WorldCom NRC Rebuttal Panel at 11.

^{11/} VZ-VA NRC Panel Rebuttal at 46-48.

Verizon VA Non-Recurring Cost Panel Surrebuttal Testimony

1 individual DS0 voice grade channels will simply not materialize given currently available
2 technology.

3
4 Finally, AT&T/WorldCom's exhibits allude to an OSS that would automate the
5 placement of an electronic cross-connect to provide connectivity at the RT between the
6 customer and the DS1/DS3 connected to the CLEC collocation arrangements. However,
7 no such system exists, and AT&T/WorldCom have not provided any evidence to the
8 contrary. Even under AT&T/WorldCom's extreme view of the TELRIC methodology,
9 prices must only mimic the "costs that an efficient incumbent[, . . . using the most
10 efficient technology *available today*, would incur."^{12/} Thus, the assumption that Verizon
11 VA will be using a purely imaginary OSS to provision services in a purely imaginary
12 loop architecture has no place in the determination of UNE prices.

13
14 **Q. Do you agree that the network mix assumed in Verizon VA's NRCM — 26% IDLC**
15 **and 74% copper or UDLC — "is far lower than the forward-looking percentage of**
16 **IDLC would be, even as Verizon has assumed for its recurring study"?**

17 **[AT&T/WorldCom NRC Rebuttal Panel at 12-13.]**

18 A. No. As Verizon VA explained in its direct panel testimony,^{13/} Verizon VA's current
19 network contains 23% IDLC. In three years, it is expected to be comprised of 26%
20 IDLC. This, therefore, *is* the make-up of the network that will be used to provide UNEs
21 to the CLECs on a going-forward basis over the next three years. To assume a higher

^{12/} AT&T/WorldCom NRC Rebuttal Panel at 6 (emphasis added).

^{13/} VZ-VA Panel Direct at 325-27.

Verizon VA Non-Recurring Cost Panel Surrebuttal Testimony

1 percentage of IDLC — and thus any lower costs that might result from use of IDLC
2 rather than UDLC or copper facilities — would be to understate the non-recurring costs
3 that Verizon VA will incur going forward to satisfy CLEC requests. As Drs. Shelanski
4 and Gordon explained in their direct testimony, use of the 26% IDLC deployment figure
5 is therefore appropriate under TELRIC.^{14/}
6

7 In any event, changing the assumed percentage of IDLC in the NRCM would
8 properly have little or no effect on non-recurring costs. In fact, if a greater percentage of
9 IDLC UNE loops were included in Verizon VA's studies, the non-recurring costs would
10 likely be *greater* than the cost presented in this proceeding. First, because unbundling an
11 IDLC-fed loop with currently available technology requires converting the loop to UDLC
12 or copper, increasing the amount of assumed IDLC will not lower the costs of unbundling
13 loops and instead will require the additional cost of the conversion. Second, even if it
14 were possible to unbundle IDLC-fed loops as AT&T/WorldCom assert (which, as
15 discussed above, it is not), the result would constitute an entirely separate product, and
16 the proper approach would be to develop a *separate* non-recurring charge for such a
17 virtual loop. Verizon VA could then assess the appropriate non-recurring charge
18 depending on the type of loop that was unbundled, and the assumed percentages would
19 not make a difference.
20

^{14/} See Shelanski Direct at 32-35; Gordon Direct at 28-31.

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1 **Q. Please respond to AT&T/WorldCom’s complaint that Verizon VA “intends to use**
2 **exclusively UDLC for unbundling fiber loops” for the purpose of “generat[ing] the**
3 **highest possible non-recurring costs.” [AT&T/WorldCom NRC Rebuttal Panel at**
4 **14.]**

5 **A. AT&T/WorldCom’s attack is entirely unwarranted. While UDLC was indeed the first**
6 **type of DLC deployed in the outside plant network, it remains to this day the *only* form of**
7 **DLC capable of carrying traffic that terminates anywhere other than the Verizon VA**
8 **switch. Various Verizon VA services — including, for example, certain retail ISDN**
9 **services and Digital Data Services, as well as unbundled services — are carried from the**
10 **customer’s premises over Verizon VA local loop facilities but do *not* terminate on the**
11 **Verizon VA switch. Despite the CLECs’ assumption to the contrary, these services**
12 **simply cannot be carried via IDLC facilities.^{15/} Indeed, today, and for the foreseeable**
13 **future, the only way to terminate these services is to convert the digital signal back to an**
14 **analog signal transmitted over 2-wire copper loops, run that signal to the MDF, and**
15 **connect it to the appropriate termination facility. Verizon VA continues to install new**
16 **UDLC even today to satisfy these very needs.**

17
18 Moreover, while Verizon VA may envision some day implementing some form of
19 GR-303 technology, such technology does not exist in the form the AT&T/WorldCom
20 panel assumes — *i.e.*, in a form that allows grooming of individual DS0s at the RT to
21 channels within DS1 virtual feeders to multiple switches owned by multiple LECs. Such
22 functionality would require the creation of a GR-303 interface group from an individual

^{15/} See VZ-VA Panel Direct at 92-94, 328-29; Verizon VA NRC Rebuttal at 45-53.

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1 RT to a specific CLEC, which is not technically feasible. Available DLC technology
2 does not support multi-carrier operation. The DLC GR-303 technology uses dynamic
3 time slot interchange functionality, meaning that it provides and severs electronic
4 connections in the remote terminal on a call-by-call basis. This functionality requires
5 continuous communication between the switch and remote terminal to administer and
6 control the ongoing electronic activity so that, for example, an ongoing call is not cut off
7 because the channel it is using is transferred to a new call. If a single RT were connected
8 to multiple switches — each owned and operated by a different company — network
9 reliability, network security, and operational control of the remote terminal would be
10 placed at risk. These problems would have to be resolved before GR-303-based systems
11 could become technically feasible in a multi-carrier environment. The industry has not
12 yet done so, and we are aware of no carrier who has put such technology to use in such an
13 environment.

14
15 The problems raised by use of GR-303 technology in a multi-LEC environment
16 are further explained in the attached letter from Alcatel.^{16/} As that document describes,
17 “operating GR-303 in a multi-carrier, multiple VIG environment introduces a number of
18 significant additional challenges to the industry that still must be solved.” These include,
19 for example, the difficulty in partitioning GR-303 technology to allow control by
20 multiple LECs, the need for a complicated automated administration system to govern
21 interactions among the carriers owning connected switches, and the great difficulties that

^{16/} See Letter from William A. Pappentick to Mike Nawrocki, dated Feb. 19, 1999 (attached hereto at Attachment A).

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1 would arise from different carriers' use of distinct testing methodologies within a single
2 GR-303 interface group.^{17/}

3
4 **Q. Are AT&T/WorldCom correct in suggesting that the loop element need not include**
5 **a physical point of interconnection on the distribution frame? [AT&T/WorldCom**
6 **NRC Rebuttal Panel at 15.]**

7 A. No. As described above, it is not technically feasible to provide the loop element without
8 a physical point of interconnection on the distribution frame. While provision of service
9 over IDLC is possible when Verizon VA's local loop facilities need only connect with
10 *Verizon VA local switch facilities* (as in, for example, migrating an existing Verizon VA
11 retail customer to a CLEC using UNE-P), such provision simply is not technically
12 feasible in a multi-LEC environment. AT&T/WorldCom, unsurprisingly, have conceded
13 that they cannot identify a single example in which virtual connections are employed in
14 such an environment.

15
16 **Q. AT&T/WorldCom refer to a paper that they contend "showed how the capabilities**
17 **of IDLC systems . . . can be used to provide sophisticated switched services to any**
18 **subscriber in a LATA from a small number of host switches," and to a more recent**
19 **report allegedly offering a similar conclusion. [AT&T/WorldCom NRC Rebuttal**
20 **Panel at 16, 17.] Do these papers contradict your last response?**

21 A. The referenced article in no way contradicts Verizon VA's arguments. First, the article
22 spends significant time addressing a proposed theoretical architecture that a single LEC

^{17/} See *id.*

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1 might use to introduce new/multiple enhanced services. That issue has nothing to do
2 with the issue here, which is the provision of virtual switching (and, relatedly, service
3 over fiber) in a multi-LEC environment.
4

5 Second, the article, which is eight years old, is entirely theoretical, and relies upon
6 technologies that never came to operate in the manner that the authors envisioned. The
7 article is replete with references to “concepts,” “ideas,” and “theories” but has little to say
8 about actual practical implementation of any of them. Moreover, where it does speculate
9 about the uses to which technology might be put to allow digital provision of service in a
10 multi-LEC environment, its predictions have not been realized. The article relies
11 extensively on the use of TR-303 technology, which is, in essence, identical to GR-303
12 technology. As described in detail above, use of such technology in a multi-carrier
13 environment is not technically feasible at this time.
14

15 Finally, as a consequence of having been written eight years ago, the paper does
16 not adequately comprehend the unbundling demands in the post-1996 Act
17 telecommunications industry. In 1993, unbundling was a mostly unexplored territory.
18 Today, we have a much greater understanding of the technical demands — and technical
19 perils — associated with unbundling, and recognize that what might have seemed
20 theoretically feasible in 1993 is not necessary realistic.
21

22 The fact that AT&T/WorldCom are forced to rely on an old theoretical paper
23 written before there was even a multi-LEC environment rather than being able to point to

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1 *any* actual case, or even any technical trial, in which unbundling has been implemented as
2 they hypothesize only confirms that their proposed form of unbundling is nothing more
3 than a theory.

4
5 **Q. What about the Telcordia Report cited by AT&T/WorldCom? [AT&T/WorldCom**
6 **NRC Rebuttal Panel at 17-18 & n.12.]**

7 A. This document also does not refute Verizon VA's testimony. The Telcordia report lists
8 several "IDLC unbundling options." The first two — "Bypass the IDLC system and
9 transfer the loop to an all-copper pair" and "Bypass the IDLC system and transfer the
10 loop to a UDLC system" — are of course precisely the approaches Verizon VA employs
11 on a daily basis to provision UNE loops for CLEC customers whose new end-users reside
12 on IDLC.

13
14 One "option" listed — "[u]tilize a separate GR-303 Interface Group for the CLEC
15 customers" (Option 4) — is similar to the approach sketched by AT&T and WorldCom
16 here. However, the Telcordia report itself states that — as Verizon VA has explained —
17 this approach "raises a variety of issues (provisioning, alarm reporting, sharing of test
18 resources, etc.)" that still need to be addressed before this option would be feasible.^{18/}
19 Thus, it is hardly surprising that AT&T/WorldCom have failed to identify even one
20 carrier that has even put such an arrangement through trials, much less in actual
21 operation. Clearly, this architecture is still in the research and development phase and
22 cannot be used as a basis on which to set UNE prices.

^{18/} Telcordia Technologies Special Report, SR-2275, Issue 4, October 2000, Section 12.13.2.1 Whole Loop Unbundling Configurations.

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1
2 The remaining options are likewise far from actual practical usage and would
3 impose significant additional costs. In any case, AT&T/WorldCom do not attempt to
4 propose them in their model or their testimony in this proceeding. For example, the
5 Telcordia Report notes the theoretical possibility that the ILEC could “[s]hare a GR303
6 Interface Group and use the sidedoor port of the switch to transport CLEC traffic out of
7 the ILEC switch.” Yet, as described in the report itself, implementation of this approach
8 could only occur after solving numerous inherent problems, such as serious degradation
9 of RDT and switch capacities that would cause service degradation to existing Verizon
10 customers and force Verizon to endure the costs of augmenting the capacity of the switch
11 fabric to ensure that adequate service levels can be maintained.^{19/} These costs would
12 have to be recovered via recurring rate increases (which, of course, AT&T/WorldCom do
13 not propose). Likewise, the report notes the possibility of the CLEC leasing a portion of
14 the remote terminal or the *entire* remote terminal. These options — even if brought from
15 the realm of theory, where they currently reside, to the real world — would constitute
16 separate UNE products that would impose a variety of additional costs. Of course,
17 AT&T/WorldCom again do not propose this approach or model the related costs.

18
19 In the end, while AT&T/WorldCom make much of a couple of papers theorizing
20 about possible options for electronically unbundling loops, they have not begun to
21 demonstrate that this is practically feasible or even modeled the full costs of such a
22 hypothetical approach. Verizon VA’s approach, by contrast, ensures the safety and

^{19/} See *id.*

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effectiveness of the Verizon VA network and represents the only currently feasible and operationally sound approaches for Verizon to unbundle end-user services served by IDLC.

Q. For the purposes of developing its NRCM, has Verizon VA assumed forward-looking OSS?

A. Yes, it has. All costs contemplated by Verizon VA's model are modified by a Forward-Looking Adjustment Factor that accounts for expected future mechanization and advances in labor productivity. Key attributes of the forward-looking OSS environment include the following:

1. Electronic application-to-application ordering interface for the carrier;
2. Flow through service order and work order distribution process;
3. Fully automated, remote network activation process and system for all electronic elements;
4. Mechanized work force management and dispatch process; and
5. Intelligent, hand-held technician workstations allowing remote electronic work order close-out.

Verizon's Forward-Looking Adjustment Factor considers more than simple fallout. It also considers improvements to OSSs and new OSSs that may increase the proportion of orders that flow through. The cost calculus recognizes the frequency with which a particular activity must be performed in the current environment through

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1 application of the Typical Occurrence Factor and then, using the Forward-Looking
2 Adjustment Factor, assumes a forward-looking posture by further projecting the effects of
3 expected OSS improvements and Verizon VA initiatives on the ability to process a
4 request in a mechanized manner.

5 6 7 **III. THE METHODOLOGY USED TO DERIVE WORK TIMES IS SOUND. (JDPL** 8 **Issues II-1 to II-1-d; II-2 to II-2-d; IV-36)**

9 **A. Verizon VA's Methodology For Collecting And Evaluating Work Times Is** 10 **Statistically Sound and Resulted in Reliable Estimates.**

11
12 **Q. AT&T/WorldCom make a variety of attacks on Verizon VA's survey methodology**
13 **for determining work time estimates. Before responding to their specific claims,**
14 **what is your general response?**

15 A. Although, as explained below, we strongly disagree with AT&T/WorldCom's specific
16 criticisms of our survey, it is important not to lose sight of the contrast between Verizon's
17 careful and methodical time estimates and AT&T/WorldCom's hypothetical conjectures.
18 Verizon VA's study starts with actual, empirical work times from workers who have
19 actually performed the relevant tasks as a baseline (which it then adjusts to take account
20 of future efficiencies). By contrast, AT&T/WorldCom's hypothetical work times are
21 based on unexplained and unsupported conjecture by a roomful of purported experts,
22 many of whom seem never to have even provisioned a UNE. AT&T/WorldCom's
23 process is thus inherently subjective and cannot even pretend to have any statistical or
24 other empirical validity.
25